

IN THE CLAIMS:

Please amend the claims to read as follows:

1. (previously presented) An encoder for encoding a digital baseband signal in a spread spectrum communication system, said encoder comprising:

an exclusive "or" logic unit having a first input for receiving said digital baseband signal;

a one bit delay unit having an input coupled to the output of said exclusive "or" logic unit, said one bit delay unit having an output coupled to a second input of said exclusive "or" logic unit;

the output of said exclusive "or" logic unit providing an encoded digital baseband signal;

said encoded digital baseband signal coupled to a modulator so as to modulate spread spectrum carrier signal; and

wherein said spread spectrum communication system is a geometric harmonic modulation communication system and wherein the encoder, at least, facilitates identification of transmission errors resulting from a time varying function due to transmission through distribution transformers.

2. (canceled)

3. (previously presented) A decoder for decoding a digital baseband signal recovered from a geometric harmonic modulation spread spectrum communication signal said decoder comprising:

a one bit delay unit having an input coupled to the output of a geometric harmonic modulation Fourier transform unit;

a multiplier having a first input coupled to the output of said geometric harmonic modulation Fourier transform unit, and a second input coupled to the output of said one bit delay unit;

a summer coupled to the output of said multiplier;

a logic level determiner coupled to the output of said multiplier said logic level determiner to provide a decoded digital baseband signal wherein the decoder, at least, facilitates identification of transmission errors resulting from a time varying function due to transmission through distribution transformers.

4. (previously presented) A coder for a geometric harmonic modulation spread spectrum communication system, said coder comprising:

an encoder including:

an exclusive "or" logic unit having a first input for receiving a baseband digital signal;

a one bit delay unit having an input coupled to the output of said exclusive "or" logic unit;

said one bit delay unit having an output coupled to a second input of said exclusive "or" logic unit;

the output of said exclusive "or" logic unit providing an encoded digital baseband signal;

said encoded digital baseband signal modulating a spread spectrum carrier signal;

a decoder including:

a one bit delay unit having an input coupled to the output of a geometric harmonic modulation Fourier transform unit;

a multiplier having a first input coupled to the output of said geometric harmonic modulation Fourier transform unit, and a second input coupled to the output of said one bit delay unit;

a summer coupled to the output of said multiplier;

a logic level determiner coupled to the output of said summer said logic level determiner providing a decoded digital baseband signal as its output

wherein the encoder and the decoder, at least, facilitate identification of transmission errors resulting from a time varying function due to transmission through distribution transformers.

5. (original) A coder according to claim 4 wherein the modulated spread spectrum carrier signal is coupled to a power line and wherein said power line is utilized to convey said encoded baseband signal information from said encoder to a receiver.

6. (currently amended) A method for encoding a digital baseband signal in a spread spectrum communications system, the method comprising the steps of:

providing said digital baseband signal to a first input of an exclusive "or" unit;

performing an exclusive "or" operation on said first input and a second input of said exclusive "or" unit;

delaying the output of said exclusive "or" unit and providing the delayed output to said second input of said exclusive "or" unit;

the undelayed out put of said exclusive "or" unit being the encoded digital baseband signal; and

wherein said spread spectrum communication system is a geometric harmonic modulation communication system and wherein the method for encoding, at least, facilitates identification of transmission errors resulting from a time varying function due to transmission through distribution transformers.[.]

7. (original) The method of claim 6 further comprising the step of utilizing the encoded baseband output to modulate a spread spectrum carrier signal.

8. (original) The method of claim 6 wherein the output of said exclusive "or" unit is delayed for one bit period.

9. (original) The method of claim 7 wherein said modulated spread spectrum carrier is coupled to a power line.

10. (original) A method of decoding digital baseband signal encoded by the method of claim 6, when the encoded digital baseband signal modulates a geometric harmonic modulation carrier signal, the method comprising the steps of:

decomposing said geometric harmonic modulation signal into geometric harmonic modulation tones;

providing said geometric harmonic modulation tones to a first input of a multiplier;

delaying said geometric harmonic modulation tones and providing the delayed tones to a second input of said multiplier;

multiplying said first input by said second input to provide a product;

summing said product;

determining the logic level of said product, the determined logic level being the decoded baseband signal.

11. (original) A method in accordance with claim 10 further comprising the steps of:

declaring a logical zero when said product is greater than or equal to zero, and otherwise

declaring a logical one.
